



UNITED STATES PATENT AND TRADEMARK OFFICE

AS
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,362	01/16/2002	Yasuji Hiramatsu	215240US0PCT	9235

22850 7590 10/21/2002

OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER

KOPPIKAR, VIVEK D

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 10/21/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/926,362	Applicant(s) HIRAMATSU ET AL.	
	Examiner Vivek D Koppikar	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 15 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 09-124383 to Tomohide.

Tomohide teaches a sintered aluminum nitride substrate with sulfur which is present in amounts less than 250 ppm (Translated Abstract). The sintered body also includes an oxide of a group 3a element (Translated Claims).

Claims 4-6 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 06-191955 to Susumu.

Susumu teaches an aluminum nitride sintered compact body in which intragranular fracture occurs at the time of fracture (Translated Detailed Description, [0004]). Table 2 shows the properties of the grains and the grain diameters are 3 μm or less.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1775

4. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-191955 to Susumu as applied to claim 5 above, and further in view of JP 09-124383 to Tomohide.

Susumu fails to teach using sulfur or oxygen in the aluminum nitride sintered body. However Tomohide uses sulfur, at a concentration of less than 250 ppm, and an oxide in a aluminum nitride sintered body (Translated Abstract). Therefore, at the time of the invention, one of ordinary skill in the art would have been motivated to add sulfur and an oxide to the aluminum nitride sintered compact body of Susumu with the expectation of suppressing the formation of a pinholes and for making the sintering process of the aluminum nitride easier as recited in Tomohide (Translation, [0003] and [0009]).

5. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-191955 to Susumu as applied to Claims 5 and 12 above, and in further view of JP 11-111431 to Tomohide.

Susumu fails to teach using the aluminum nitride sintered body in a ceramic heater. However Tomohide teaches a ceramic heater with an aluminum nitride sintered compact (Translated Abstract). Therefore at the time of the invention one of ordinary skill in the art would have been motivated to use the aluminum nitride body as taught in Susumu in the ceramic heater of Tomohide with the expectation of obtaining a ceramic heater with high mechanical strength and excellent thermal conductivity as recited in Susumu (Translated Abstract).

6. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 06-191955 to Susumu as applied to Claims 5 and 12 above, and in further view of JP 08-236603 to Kenji.

Susumu fails to teach using the aluminum nitride sintered body in an electrostatic chuck.

Art Unit: 1775

However Kenji teaches an electrostatic chuck with an aluminum nitride sintered body. Therefore at the time of the invention one of ordinary skill in the art would have been motivated to use the aluminum nitride sintered body as taught in Susumu in the electrostatic chuck of Kenji with the expectation of obtaining an electrostatic chuck with high mechanical strength and excellent thermal conductivity as recited in Susumu (Translated Abstract).

Allowable Subject Matter

7. Claims 15 and 16 are allowed over the prior art.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose a ceramic substrate with more than one ceramic layer (or additional ceramic layer) located in a conductor in which the additional layer undergoes intragranular fracture.

JP 06-191955 teaches an aluminum nitride substrate with a layer that undergoes intragranular fracture but does not teach a substrate with more than one layer that undergoes intragranular fracture.

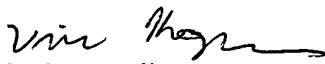
Art Unit: 1775

Conclusion


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vivek Koppikar** whose telephone number is **(703) 305-6618**. The examiner can normally be reached on Monday-Friday from 8 AM to 5 PM, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached at (703) 308-3822. The fax phone numbers for the organization where this application or proceeding are assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Vivek Koppikar

10/8/02


DEBORAH JONES
SUPERVISORY PATENT EXAMINER